

Curriculum Vitae - EXHIBIT A

Name: Philip Edward THORPE
Place of Birth: Smethwick, Worcestershire, U.K.
Nationality: British (with U.S. Permanent Residency)
Home Address: 5510 Morningside Drive
Dallas, TX 75206
Social Security #: 452-99-7852

EDUCATION:

1962-1969 Moseley Grammar School, Birmingham B17, U.K.
1969-1972 University of Liverpool, U.K.
Academic Qualifications: First Class B.Sc (Hons)
Degree in Pharmacology
(Summa cum Laude)
Postgraduate Education:
1972-1975 Medical Research Council Scholarship
Division of Surgical Sciences
Clinical Research Centre
London, U.K.
Ph.D. supervisors: Sir Peter Medawer, Dr. Stella Knight

POSTDOCTORAL EMPLOYMENT:

1975-1981 Medical Research Council Fellow
Division of Biology
Chester Beatty Research Institute
Institute of Cancer Research
Royal Cancer Hospital
Fulham Road
Chelsea
London SW3 6JB, U.K.
1981 - 1991 Director, Drug Targeting Laboratory
Imperial Cancer Research Fund
Lincoln's Inn Fields
London WC2A 3PX, U.K.
1991 - 1998 Professor of Pharmacology
Serena Simmons Distinguished Chair in Cancer Immunopharmacology

Department of Pharmacology and
Hamon Center for Therapeutic Oncology Research
University of Texas Southwestern Medical Center
5323 Harry Hines Boulevard
Dallas, Texas 75235-8593

- 1998 - 1999 Director of Oncology Research
 Associate Director of the Center for Molecular Medicine
 Maine Medical Center Research Institute
 125 John Roberts Road, Suite #5
 South Portland, Maine 04106

1999 – present Professor of Pharmacology
 Serena Simmons Distinguished Chair in Cancer Immunopharmacology
 Simmons Comprehensive Cancer Center and Hamon Center for
 Therapeutic Oncology Research
 University of Texas Southwestern Medical School
 NC7.340
 2201 Inwood Rd.
 Dallas, TX 75235-8794

UT SOUTHWESTERN GRADUATE PROGRAM APPOINTMENTS:

Cell Regulation Graduate Program, UTSW Immunology Graduate Program, UTSW

GRADUATE SCHOOL TEACHING (annual):

Mechanisms of Drug Action Course (Director)
Medical Pharmacology Course
Human Biology and Disease Course
Cancer Biology Course
Physician's Assistant Course

UT SOUTHWESTERN COMMITTEES

Promotion and Tenure Committee, 1997-98
Graduate Admissions Committee, 1994-96
Clinical Research Scientific Review And Monitoring Committee, 1997-8
Department of Cell and Molecular Biology Review Committee, 1997-8
Radioactive Drug Research Committee, 2003-present
American Cancer Society Institutional Review Group, 2004-present

PROFESSIONAL SOCIETIES:

American Association for Cancer Research
American Association for Immunology
American Society for Pharmacology and Experimental Therapeutics
North American Vascular Biology Organization
Sigma Xi
Society for Biological Therapy

SCIENTIFIC ADVISORY BOARDS:

Scientific Advisory Board, Cytopharm Inc., Munich, Germany, 1990-1996
Scientific Advisory Board, Texcellon Inc., Dallas, TX, 1990-1993
Scientific Advisory Board, Peregrine Pharmaceuticals, Inc., Princeton, NJ, 1993-1997
Scientific Advisory Board, Repair, Inc., Portland, ME, 1998-2000
Scientific Advisory Board, Peregrine Pharmaceuticals, Inc., Tustin, CA, 1997-present
Scientific Advisory Board, Arcus Therapeutics, Inc., Boston, MA, 2000-2002
Founding Scientist, Peregrine Pharmaceuticals, Inc., Tustin, CA

EDITORIAL BOARDS:

IRCS Journal of International Research Communication, 1974-1984
Advanced Drug Delivery Research Reviews, 1985-1992
Antibody, Immunoconjugates and Radiopharmaceuticals, 1987-1995
Bioconjugate Chemistry, 1989-present
Journal of Drug Targeting, 1992-2000
Therapeutic Immunology, 1992-present
Angiogenesis, 1997-present
Cancer Biotherapy and Radiopharmaceuticals, 2004-present

INTERNATIONAL CONFERENCES ORGANIZED:

Co-organizer (with Dr. G. Gregoriadis), NATO meeting on Receptor Mediated Targeting of Drugs, Greece, 1983
Vice Chairman, Gordon Research Conference on Drug Carriers in Medicine and Biology, Ventura, CA 1996
Chairman (with Dr. Ruth Duncan), Gordon Research Conference on Drug Carriers in Medicine and Biology, Ventura, CA, 1998
Chairman, 1st International Symposium on Vascular Targeting, Boston, MA, 2002
Chairman, 2nd International Symposium on Vascular Targeting, Miami, FL, 2004

INVESTIGATIONAL NEW DRUG (IND) APPLICATIONS

RFB4-SMPT-dgA for Treatment of B-lymphoma (with Dr. E. Vitetta), 1989
RFT5-SMPT-dgA for Treatment of Hodgkin's Disease (with Dr. E. Vitetta), 1992
Tarcacin™ for Treatment for Hepatitis C virus (with Peregrine Pharmaceuticals, Inc.), 2005

HONORS AND AWARDS:

Pierce Immunotoxin Award, 1988
The State of Texas House of Representatives Resolution recognizing his contribution to cancer research, 1997.
American Cancer Society 'Award of Excellence', 1999

GRANTS (since 1991):

Past

Vascular Targeting: A New Approach to the Therapy of Solid Tumors; Dallas Biomedical Corporation; \$161,832 direct for the period of October 1, 1991-December 31, 1992.

Heparin-Steroid Conjugates: A New Class of Angiogenesis Inhibitors for Clinical Applications: Dallas Biomedical Corporation; \$134,613 direct for the period of October 1, 1991 to December 31, 1992.

Vascular Targeting: A New Approach to the Therapy of Solid Tumors; Elsa U. Pardee Foundation; \$64,843 for the period of May 1, 1992-April 30, 1993.

Vascular Targeting Program; Dallas Biomedical Corporation; \$119,123 direct for the period of January 1, 1993-June 30, 1993.

Recombinant Antibodies for Targeting the Vasculature of Solid Tumors; Elsa U. Pardee Foundation; \$128,658 direct for the period of June 1, 1993-May 31, 1995.

New Angiogenesis Inhibitors for the Therapy of Breast Cancer; American Cancer Society DHP-95; \$150,000 direct for the period of July 1, 1993-June 30, 1995.

Developmental project funded from Dr. John Minna's SPORE Grant 1 P50 CA709097 from the National Institutes of Health; \$20,000 direct for the period of September 1, 1996-August 30, 1997.

Holder of the Serena S. Simmons Distinguished Chair in Cancer Immunopharmacology, annual income \$60,000.

Vascular Targeting: A New Approach to the Therapy of Solid Tumors and Rheumatoid Arthritis; Anonymous Donor; \$1,666,665 direct for the period of September 1, 1992-December 31, 1997.

Mechanisms of drug action and disposition; National Institutes of Health T32-GM07062 (training grant, PI-Dr. Alfred Gilman); \$54,000 direct for the period of September 1, 1994-August 31, 1999.

Vascular Targeting Agents that Home to and Destroy or Coagulate Tumor Vasculature; Peregrine Pharmaceuticals; \$480,000 for the period of December 1, 1994-December 1, 1997.

Vascular Targeting Agents for Infarcting Lung Cancer; Advanced Research Program from the State of Texas; \$247,500 direct for the period of January 1, 1996-December 31, 1997.

Therapeutic Clotting to Destroy Solid Tumors; Advanced Technology Program from the State of Texas; \$190,579 for the period of January 1, 1998-December 31, 1999.

Angiogenesis Inhibitors for Therapy of Solid Tumors; National Institutes of Health 5-RO1-CA59569; \$781,718 direct for the period of December 15, 1993-November 30, 1999.

Collateral Tumor Targeting; Sponsored Research Agreement with Techniclon Corporation; \$1,050,000 direct for the period of April 1999-March 2001

Immunotoxins for the Treatment of Hodgkin's Disease; National Institutes of Health 5-RO1-CA54168; \$820,052 direct for the period of April 1, 1991-May 31, 2000.

Targeting the Vasculature of Solid Tumors; National Institutes of Health 1-RO1-CA74951; \$728,529 direct for the period of December 1, 1997-November 30, 2001.

Specific coagulation of tumor vasculature. Texas Technology ARP grant; \$200,000

Present

Novel anti-viral agents for treating Lassa fever. NIH, \$1,798,285, 2003-08.

Naked antibodies for treating cancer; Sponsored Research Agreement with Peregrine Pharmaceuticals, Inc., \$500,000 per year direct (since 1999)

Therapeutic clotting to destroy solid tumors; Gillson Longenbaugh Foundation, Houston, Texas; \$50,000 per year

Anti-angiogenic drugs for childhood brain cancer. Chesler Foundation, \$10,000 per year.

VEGF-rGel for targeting the vasculature of breast cancer (M.Rosenblum, P.I). Dept. of Defense. \$43,000 per year for 2002-5.

Simmons Foundation, Serena S. Simmons Distinguished Chair in Cancer Immunopharmacology, \$86,000 per year.

Vascular Targeting Antibodies for Improving Chemotherapy of Prostate Cancer (P. Thorpe, PI). Department of Defense; \$210,000 per year

Synergy between anti-phosphatidylserine monoclonal antibody, 3G4 and docetaxel for treatment of breast cancer (X. Huang, PI; P. Thorpe, Co-PI), Susan Komen Foundation for Basic, Clinical and Translational Breast Cancer Research; \$200,000 per year

A strategy for enhancing the effect of radiation in the treatment of breast cancer (T. Luster, Fellowship). American Cancer Society; \$80,000 per year

PATENTS

Issued

1. Heterobifunctional linking agents derived from N-succinimido-dithio-alpha methyl-methylene-benzoates (Inventor: P. Thorpe)
U.S. Patent No. 4,880,935
2. Purification of A-chain immunotoxins (Inventor: P. Thorpe)
U.K. Patent No. 43606 P3474
3. Methods and compositions for the treatment of Hodgkin's disease (Inventors: P. Thorpe and A. Engert)
U.S. Patent No. 5,165,923
4. Preparation and use of steroid-polyanionic polymer-based conjugates targeted to vascular endothelial cells (Inventor: P. Thorpe)
U.S. Patent No. 5,474,765
U.S. Patent No. 5,762,918
5. Methods and compositions for targeting the vasculature of solid tumors (Inventors: P. Thorpe and F. Burrows)
U.S. Patent No. 6,004,554
U.S. Patent No. 5,965,132
U.S. Patent No. 5,855,866
U.S. Patent No. 5,776,427
U.S. Patent No. 5,863,538
U.S. Patent No. 6,051,230
U.S. Patent No. 6,261,535
European Patent No. 0 627 940 (17 countries, including France, Germany, U.K.)
6. Antibodies that bind to endoglin (Inventors: P. Thorpe and F. Burrows)
U.S. Patent No. 5,660,827
7. VEGF-Gelonin for targeting the vasculature of solid tumors (Inventor: P. Thorpe)
U.S. Patent No. 6,451,312
8. Methods and compositions for the coagulation of tumor vasculature (Inventors: P. Thorpe and T. Edgington)
U.S. Patent No. 6,093,399
U.S. Patent No. 6,004,555
U.S. Patent No. 5,877,289
U.S. Patent No. 6,036,955
U.S. Patent No. 6,749,853
European Patent No. 0 771 216 (16 countries, including France, Germany, U.K.)
Australian Patent No. 702250
New Zealand Patent No. 288883
Hungarian Patent No. 220347
Singapore Patent No. 35823
Mexican Patent No. 212,225

9. Tissue Factor methods, compositions and combination for coagulation and tumor treatment (Inventors: P. Thorpe, S. King and B. Gao)
U.S. Patent No. 6,156,321
U.S. Patent No. 6,132,729
U.S. Patent No. 6,132,730
European Patent No. 0 988 056 (15 countries, including France, Germany, U.K.)
Australian Patent No. 735187
New Zealand Patent No. 336720
Singapore Patent No. 66589
10. Cancer treatment methods using antibodies to aminophospholipids (Inventors: P. Thorpe, S. Ran)
U.S. Patent No. 6,406,693
Australian Patent No. 771224
New Zealand Patent No. 508950
11. Cancer treatment methods using therapeutic conjugates that bind to aminophospholipids (Inventors: P. Thorpe, S. Ran, R. Brekken)
U.S. Patent No. 6,312,694
European Patent No. 1 098 665 (15 countries, including France, Germany, U.K.)
Australian Patent No. 750414
Singapore Patent No. 78111
New Zealand Patent No. 508873
12. Antibody and antibody conjugate compositions and kits for selectively inhibiting VEGF (Inventors: P. Thorpe, R. Brekken)
U.S. Patent No. 6,342,219
U.S. Patent No. 6,342,221
U.S. Patent No. 6,416,758
U.S. Patent No. 6,524,583
U.S. Patent No. 6,676,941
U.S. Patent No. 6,703,020
Australian Patent No. 774287
Australian Patent No. 763954
European Patent No. 1 179 541
South African Patent No. 2001/8612
South African Patent No. 2001/8285

Pending

44 pending regular U.S. patent applications and 186 pending international patent applications directed to compositions and methods for the diagnosis and treatment of cancer and viral infections

PUBLICATIONS:(Total = 173 plus 1 submitted)

1. Thorpe, P. E. and Knight, S. C. (1974) Microplate culture of mouse lymph node cells. I. Quantitation of responses to allogeneic lymphocytes and phytomitogens. *J. Immunol. Methods* **5**: 387-404.
2. Thorpe P. E., Knight, S. C. and Farrant, J. (1976) Optimal conditions for the preservation of mouse lymph node cells in liquid nitrogen using cooling rate techniques. *Cryobiology* **13**: 126-138.
3. Thorpe, P. E., Ross, W. C. J., Cumber, A. J., Hinson, C. A., Edwards, D. C. and Davies, A. J. S. (1978) Toxicity of diphtheria toxin for lymphoblastoid cells is increased by conjugation to anti-lymphocytic globulin. *Nature* **271**: 752-754.
4. Ross, W. C. J., Thorpe, P. E., Cumber, A. J., Edwards, D. C., Hinson, C. A., and Davies, A. J. S. (1980) Increased toxicity of diphtheria toxin for human lymphoblastoid cells following covalent linkage to anti-(human lymphocyte) globulin or its $F(ab^1)_2$ fragment. *Eur. J. Biochem.* **104**: 381-390.
5. Davies, A. J. S., Edwards, D. C. and Thorpe, P. E. (1981) Introduction to a symposium on new trends in human immunology and cancer immunotherapy. In 'New Trends in Human Immunology and Cancer Immunotherapy'. pp 1-7.
6. Thorpe, P. E., Cumber, A. J., Williams, N., Edwards, D. C., Ross, W. C. J. and Davies, A. J. S. (1981) Abrogation of the non-specific toxicity of abrin conjugated to anti-lymphocyte globulin. *Clin. Exp. Immunol.* **43**: 195-200.
7. Thorpe, P. E., Brown, A. N. F., Ross, W. C. J., Cumber, A. J., Detre, S. I., Edwards, D. C., Davies, A. J. S. and Stirpe, F. (1981) Cytotoxicity acquired by conjugation of an anti-Thy 1.1 monoclonal antibody and the ribosome-inactivating protein, gelonin. *Eur. J. Biochem.* **116**: 447-454.
8. Edwards, D. C. and Thorpe, P. E. (1981) Targeting toxins - the retiarian approach to chemotherapy. *Trends in Biochemical Sciences*, 313-316.
9. Edwards, D. C., Smith, A., Ross, W. C. J., Cumber, A. J., Thorpe, P. E. and Davies, A. J. S. (1981) The effect of abrin, anti-lymphocyte globulin and their conjugates on the immune response of mice to sheep red blood cells. *Experientia* **37**: 256-257.
10. Skilleter, D. N., Paine, A. J. and Thorpe, P. E. (1981) Selective direction of ricin to hepatic parenchymal cells. *Biochem. Soc. Transactions* **10**: 122-123.
11. Thorpe, P. E., Cumber, A. J., Davies, A. J. S., Edwards, D. C., Ross, W. C. J. and Smith, A. (1982) The immunosuppressive effects of anti-Thy 1.1 $F(ab^1)_2$ conjugated to abrin. In 'Antibodies as Carriers of Anticancer Drugs or Toxins: Quo Vadis?' (F. K. Jansen and R. Roncucci, eds.) SANOFI, Montpellier, France, pp. 134-135.
12. Thorpe, P. E., Brown, A., Cumber, A. J., Davies, A. J. S., Edwards, D. C., Ross, W. C. J. and Stirpe, F. (1982) Selective cytotoxicity with a conjugate of anti-Thy 1.1 antibody and gelonin.

In 'Antibodies as Carriers of Anticancer Drugs or Toxins: Quo Vadis?' (F. K. Jansen and R. Roncucci, eds.) SANOFI, Montpellier, France, pp. 123-124.

13. Edwards, D. C., Ross, W. C. J., Cumber, A. J., McIntosh, D., Smith, A., Thorpe, P. E., Brown, A., Williams, R. H. and Davies, A. J. S. (1982) A comparison of the in vitro and in vivo activities of conjugates of anti-mouse lymphocyte globulin and abrin. *Biochim. Biophys. Acta* **71**: 272-277.
14. Edwards, D. C., Thorpe, P. E. and Davies, A. J. S. (1982) Antibody-toxin conjugates as potential therapeutic agents. In 'Targeting of Drugs' (G. Gregoriadis, J. Senior, and A. Trouet, eds.) Plenum Press, N. Y. and London, pp. 83-96.
15. Thorpe, P. E., Ross, W. C. J. (1982) The preparation and cytotoxic properties of antibody-toxin conjugates. *Immunol. Rev.* **62**: 119-158.
16. Thorpe, P. E., Edwards, D. C., Davies, A. J. S., Ross, W. C. J. (1982) Monoclonal antibody-toxin conjugates: aiming the magic bullet. In 'Monoclonal Antibodies in Clinical Medicine' (A. McMichael and J. Fabre, eds.) Acad. Press, London, pp. 167-201.
17. Thorpe, P. E., Mason, D. W., Brown, A. N. F., Simmonds, S. J., Ross, W. C. J., Cumber, A. J. and Forrester, J. A. (1982) Selective killing of malignant cells in a leukaemic rat bone marrow using an antibody-ricin conjugate. *Nature* **297**: 594-596.
18. Mason, D. W., Thorpe, P. E., Ross, W. C. J. (1982) Elimination of leukaemic cells from rodent bone marrow in vitro with antibody-ricin conjugates: implications for autologous marrow transplantation in man. *Cancer Surveys* **1**: 389-415.
19. Davies, A. J. S., Jansen, F. K., Olsnes, S., Thorpe, P. E., Wofsy, L. and Edwards, D. C. (1982) Antibodies as toxin carriers in cancer immunotherapy. In 'Current Chemotherapy and Immunotherapy' (Proceedings of the 12th Int. Congress of Chemotherapy, Vol. 2) (Periti, P. and Grassi, G. G. Eds.) pp. 1141-1143.
20. Thorpe, P. E., Brown, A., Foxwell, B. and Myers, C. (1983) Blockade of the galactose-binding site of ricin by its linkage to antibody. In 'Monoclonal Antibodies and Cancer' (B. D. Boss, R. Langman, I. Trowbridge and R. Dulbecco, eds.) Acad. Press (London) Ltd., pp. 117-124.
21. Vodinlich, L., Myers., C., Sutherland, R., Thorpe, P. E. and Greaves, M. F. (1983) WT1: a monoclonal antibody in T-cell acute lymphoblastic leukemia. *Leukemia Reviews International* **1**, 263.
22. Thorpe, P. E., Detre, S. I., Mason, D. W., Cumber, A. J. and Ross, W. C. J. (1983) Monoclonal antibody therapy: 'model' experiments with toxin conjugated antibodies in mice and rats. *Haematology and Blood Transfusion* **28**: 107-111.
23. Rennie, D. P., McGregor, A. M., Wright, J., Weetman, A. P., Hall, R. and Thorpe, P. E. (1983) An immunotoxin of ricin A chain conjugated to thyroglobulin selectively suppresses the antithyroglobulin autoantibody response. *Lancet* **ii**, 1338-1340.
24. Thorpe, P. E., Ross, W. C. J., Brown, A. N. F., Myers, C. D., Cumber, A. J., Foxwell, B. M. J. and Forrester, J. A. (1984) Blockade of the galactose-binding sites of ricin by its linkage to

- antibody: specific cytotoxic effects of the conjugates. *Eur. J. Biochem.* **140**: 63-71.
25. Sikora, K., Smedley, H. and Thorpe, P. E. (1984) Tumor Imaging and Drug Targeting. *Brit. Med. Bull.* **40**: 233-239.
26. Myers, C. D., Thorpe, P. E., Ross, W. C. J., Cumber, A. J., Katz, F. E., Tax, W., and Greaves, M. F. (1984) An immunotoxin with therapeutic potential in T cell leukemia: WT1-ricin A. *Blood* **63**: 1178-1185.
27. Foxwell, B. M. J., Ross, W. C. J. and Thorpe, P. E. (1984) Antibody-ricin conjugates: a method of linkage which blocks the galactose binding site of ricin. *Behring Inst. Mitt.*, **74**: 101-107.
28. Thorpe, P. E. (1984) Antibody-toxin conjugates as anti-cancer agents. In 'Cancer Chemotherapy and Selective Drug Development' (Harrap, K. R., Davies, W. and Calvert, A. H. eds.) Martinus-Nijhoff Publishing Co., Boston, The Hague, Dordrecht and Lancaster, pp. 263-267.
29. Paraskeva, C., Buckle, B. G. and Thorpe, P. E. (1985) Selective killing of contaminating human fibroblasts in epithelial cultures derived from colorectal tumours using an anti-Thy-1 antibody-ricin conjugate. *Br. J. Cancer* **51**: 131-134.
30. Foxwell, B. M. J., Detre, S. I., Donovan, T. A. and Thorpe, P. E. (1985) The use of anti-ricin antibodies to protect mice intoxicated with ricin. *Toxicology* **34**: 79-88.
31. Cumber, A. J., Forrester, J. A., Foxwell, B. M. J., Ross, W. C. J. and Thorpe, P. E. (1985) The preparation of antibody-toxin conjugates. *Methods in Enzymology* **112**: 207-224.
32. Thorpe, P. E., Detre, S. I., Foxwell, B. M. J., Brown, A. N. F., Skilleter, D. N., Wilson, G., Forrester J. A. and Stirpe, F. (1985) Modification of the carbohydrate in ricin with metaperiodate-cyanoborohydride mixtures: effects on toxicity and *in vivo* distribution. *Eur. J. Biochem.* **147**: 197-206.
33. McIntosh, D. and Thorpe, P. (1985) Role of the B-chain in the cytotoxic action of antibody-ricin and antibody-abrin conjugates. In 'Receptor-Mediated Targeting of Drugs' (Gregoriadis, G., Poste, G., Senior, J. and Trouet, A. eds.) NATO ASI Series A, **82**: 105-118.
34. Foxwell, B. M. J., Donovan, T. A., Thorpe, P. E. and Wilson, G. (1985) The removal of carbohydrates from ricin with endoglycosidases H, F, and D and β -mannosidase. *Biochim. Biophys. Acta* **840**: 193-203.
35. Lord, J. M., Roberts, L. M., Thorpe, P. E. and Vitetta, E. S. (1985) Immunotoxins. *Trends in Biotechnology* **3**: 175-180.
36. Thorpe, P. E., Brown, A. N. F., Bremner, J. A. G., Foxwell, B. M. J. and Stirpe, F. (1985) An immunotoxin composed of monoclonal anti-Thy 1.1 antibody and a ribosome-inactivating protein from Saponaria officinalis: Potent antitumor effects *in vitro* and *in vivo*. *J. Natl. Cancer Inst. (USA)* **75**: 151-159.
37. Vitetta, E. S. and Thorpe, P. E. (1985) Immunotoxins containing ricin A or B chains with

- modified carbohydrate residues act synergistically in killing neoplastic B cells *in vitro*. Cancer Drug Delivery **2**: 191-198.
38. Thorpe, P. E. (1985) Antibody Carriers of Cytotoxic Agents in Cancer Therapy: A Review. In 'Monoclonal Antibodies '84: Biological and Clinical Applications'. (A. Pinchera, G. Doria, F. Dammacco and A. Bargellesi, eds.) Editrice Kurtis s.r.l., Milan, Italy. pp. 475-512.
 39. Skilleter, D. N., Price, R. J., Thorpe, P. E. (1985) Modification of the carbohydrate in ricin with metaperiodate and cyanoborohydride mixtures: effect on binding, uptake and toxicity to parenchymal and non-parenchymal cells of rat liver. Biochim. Biophys. Acta **842**: 12-21.
 40. Skilleter, D. N., Price, R. J., Thorpe, P. E. and Foxwell, B. M. J. (1985) Mannose oligosaccharides in ricin are involved in the selective uptake of the toxin by hepatic non-parenchymal cells. Human Toxicology **5**: 126, 1986.
 41. Wawrzynczak, E. and Thorpe, P. E. (1986) Monoclonal Antibodies and Therapy. In 'Introduction to the Cellular and Molecular Biology of Cancer' (L. M. Franks and N. M. Teich, eds.) Oxford University Press, (Oxford, N. Y. & Tokyo) pp. 378-410.
 42. Blakey, D. C. and Thorpe, P. E. (1986) Immunotoxins. BioEssays **4**: 292-297.
 43. Fulton, R. J., Blakey, D. C., Knowles, P. P., Uhr, J. W., Thorpe, P. E., Vitetta, E. S. (1986) Purification of ricin A₁, A₂ and B-chains and characterization of their toxicity. J. Biol. Chem. **261**: 5314-5319.
 44. Blakey, D. C. and Thorpe, P. E. (1986) Effect of chemical deglycosylation on the *in vivo* fate of ricin A-chain. Cancer Drug Delivery **3**: 189-196.
 45. Wawrzynczak, E. J. and Thorpe, P. E. (1986) Complete enzymic deglycosylation of ricin B-chain. FEBS Letters **207**: 213-216.
 46. Foxwell, B. M. J., Blakey, D. C., Brown, A. N. F., Donovan, T. A. and Thorpe, P. E. (1987) The preparation of deglycosylated ricin by recombination of glycosidase-treated A and B-chain: effects of deglycosylation on toxicity and *in vivo* distribution. Biochim. Biophys. Acta **923**: 59-65.
 47. Thorpe, P. E. and Mason, D. W. (1987) Monoclonal antibody-toxin conjugates: theory, experimental approaches and early clinical results in marrow transplantation in man. In 'Tumour Markers' (A. S. Daar, ed.) Blackwell Scientific Publ. Ltd., (London) pp. 178-203.
 48. Vitetta, E. S. and Thorpe, P. E. (1987) Immunotoxins. In 'New avenues in Developmental Cancer Chemotherapy' (Proceedings of the 8th Annual Bristol-Myers Symposium on Cancer Research'. (K. Harrap and T. A. Connors, eds.) Academic Press, N. Y. and London. pp. 265-276.
 49. Knowles, P. P. and Thorpe, P. E. (1987) Purification of immunotoxins containing ricin A-chain and abrin A-chain using Blue Sepharose CL-6B. Anal. Biochem. **160**: 440-443.
 50. Blakey, D. C., Watson, G. J., Knowles, P. P., and Thorpe, P. E. (1987) Effect of chemical

- deglycosylation of ricin A-chain on the in vivo fate and cytotoxic activity of an immunotoxin composed of ricin A-chain and anti-Thy 1.1 antibody. *Cancer Res.* **47**: 947-952.
51. Blakey, D. C., Wawrzynczak, E. J., Stirpe, F. and Thorpe, P. E. (1987) Anti-tumour activity of a panel of anti-Thy 1.1 immunotoxins made with different ribosome inactivating proteins. In 'Membrane-Mediated Cytotoxicity'. UCLA Symposia on Molecular and Cellular Biology, Volume **45** (B. Bonavida and R. J. Collier, eds.) Alan R. Liss, Inc., pp. 195-202.
 52. Wawrzynczak, E. J., Falasca, A., Jeffery, W. A., Watson, G. M. and Thorpe, P. E. (1987) Identification of a tyrosine residue in the saccharide binding site of ricin B-chain using N-[¹⁴C]-acetylimidazole. *FEBS Letters* **219**: 51-55.
 53. O'Hare, M., Roberts, L. M., Thorpe, P. E., Watson, G. J. Prior, B. and Lord, J. M. (1987) Expression of ricin A chain in Escherichia coli. *FEBS Letters*, **216**: 73-78.
 54. Stirpe, F., Derenzini, M., Barbieri, L., Farabegoli, F., Brown, A. N. F., Knowles, P. P., Thorpe, P. E. (1987) Hepatotoxicity of immunotoxins made from saporin, a ribosome-inactivating protein from Saponaria officinalis. *Virchows Arch. B Cell Path* **53**: 259-271.
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